

From the INTERNATIONAL BUREAU

PCTNOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

GIUGNI, Valter
Propria S.r.l.
Via Mazzini, 13
I-33170 Pordenone
ITALIE

Date of mailing(day/month/year)

25 September 2003 (25.09.03)

Applicant's or agent's file reference

B02122PCE2A

IMPORTANT NOTICE

International application No.

PCT/EP03/01555

International filing date(day/month/year)

17 February 2003 (17.02.03)

Priority date(day/month/year)

19 March 2002 (19.03.02)

Applicant

ELECTROLUX HOME PRODUCTS CORPORATION N.V.

1. Notice is hereby given that the International Bureau has **communicated**, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

EP

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 25 September 2003 (25.09.03) under No. 03/078357

4. **TIME LIMITS for filing a demand for international preliminary examination and for entry into the national phase**

The applicable time limit for entering the national phase will, **subject to what is said in the following paragraph**, be **30 MONTHS** from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of **19 months** from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the *PCT Newsletter*, October and November 2001 and February 2002 issues.

In practice, **time limits other than the 30-month time limit** will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For **regular updates on the applicable time limits** (20, 21, 30 or 31 months, or other time limit), Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's **sole responsibility** to monitor all these time limits.

BEST AVAILABLE COPYThe International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Authorized officer

Judith Zahra

Facsimile No.(41-22) 740.14.35

Telephone No.(41-22) 338.91.11

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

WRITTEN OPINION
(PCT Rule 66)

To:

Giugni, Valter
PROPRIA S.R.L.
Via Mazzini, 13
I-33170 Pordenone
ITALIE

Date of mailing (day/month/year)	18.08.2003
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Applicant's or agent's file reference
B02122PCE2A

REPLY DUE	within 3 month(s) from the above date of mailing
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International application No.
PCT/EP03/01555

International filing date (day/month/year)
17.02.2003

Priority date (day/month/year)
19.03.2002

International Patent Classification (IPC) or both national classification and IPC
D06F39/02

Applicant
ELECTROLUX HOME PRODUCTS CORPORATION N.V. et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 19.07.2004

Name and mailing address of the international preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Weinberg, E

Formalities officer (incl. extension of time limits)
TATABOD; S
Telephone No. +49 89 2399-6467



I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-14 as originally filed

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this opinion.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of:

☐ the entire international application,

☒ claims Nos. 14

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 14 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos.

2. A written opinion cannot be drawn due to the failure of the nucleotide and/or amino acid sequence listing to comply with the Standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-13
Inventive step (IS)	Claims	1-13
Industrial applicability (IA)	Claims	1-13

2. Citations and explanations

see separate sheet

1. Reference is made to the following document:

D1: DE 37 14 301 A

2. The subject-matter of independent claim 14 is so unclear (Art. 6 PCT), that no opinion can be established (Art. 34(4)a)ii) PCT and Art. 35(3)a) PCT) with regard to novelty, inventive step and industrial applicability of the subject-matter of this claim. Claim 14 defines the subject-matter for which protection is sought by merely referring to all figures attached to the application without stating explicitly any technical feature. Hence, the technical features of claim 14 are totally in the obscure. Therefore, claim 14 does not comply with Art. 6 PCT and with Rule 6.2(a) PCT. This objection could have been avoided by deleting independent claim 14.
3. The subject-matter of independent claim 1 and of dependent claims 2-13 complies with the requirements of Art. 33(1) PCT for the following reasons:

The closest prior art is represented by D1 which discloses (see D1, column 2, lines 56-60, claim 1, figure 1) the features of the preamble of independent claim 1 and which discloses also a second siphon provided in the compartment of the washing aid dispenser.

The technical problem solved by the present application is to provide a washing machine with a low-cost, reliable, easy to manufacture washing aid dispenser, said washing aid dispenser being capable of working in an optimum manner with liquids of different densities, even if they do not mix up homogeneously together inside the dispenser itself (see page 2, line 33 - page 3, line 29).

The solution to this problem is provided by the characterising part of independent claim 1, in particular in that the second siphon has a higher suction height than the first siphon to draw-in and convey towards said washing tub a second layer of said mixture (claim 1, lines 20-23).

The difference between claim 1 and D1 is that all the siphons of the washing aid dispenser of D1 have the same suction height with respect to the bottom of the dispenser. Consequently, the washing aid dispenser of D1 is not capable to draw-in simultaneously a mixture of water and washing aids at different levels.

Therefore, the combination of the features of independent claim 1 is neither known from the available prior art cited in the International Search Report, nor

would the skilled person find any hint or incentive in the available prior art to modify the washing aid dispenser of D1 as suggested in claim 1 of the application.

Consequently, the subject-matter of claim 1 and of the claims 2-13 which are dependent on claim 1 is new, inventive and industrially applicable. Therefore, the subject-matter of claims 1-13 meets the requirements of Art. 33(1) PCT.

4. Further, although the subject-matter of claims 1-13 meets the requirements of Art. 33(1) PCT with respect to the available prior art, amendments are required to overcome the objections below.
 - a. In independent claim 1 and dependent claim 2, the washing aid dispenser is defined by reference to its relationship to further components of a washing machine which are not part of the washing aid dispenser, like the "washing tub" (claim 1, lines 18, 21) in claim 1 and the "water supply means" (claim 2, lines 26-29) and the features of the "water supply means" outlined in claim 2.
Therefore, these claims are unclear (Art. 6 PCT, PCT-Guidelines III-4.8.) since, though directed to a washing aid dispenser, they define a washing aid dispenser not *per se* but its relationship to a washing machine.
This objection could have been avoided by directing claims 1-12 to a "washing machine comprising a washing aid dispenser". Consequently, claim 13 would have been superfluous.

Further, the term "in said compartment (3, 103) there is provided a second siphon (14, 114)" (claim 1, lines 19-20) is incorrectly placed in the characterising portion, as these features are already disclosed in D1 (see D1, claim 1) in combination with the features placed in the preamble (Rule 6.3(b) PCT).

- b. The following terms used in claim 9 are vague and unclear (Art. 6 PCT) and leave the reader in doubt as to the meaning of the technical features to which they refer:
 - a) The term "a pre-defined angle" (claim 9, line 30) refers in fact to any angle between 0° and 360°. Therefore, the intended limitations are unclear.
 - b) The term "longitudinally variable along the dispenser" (claim 9, lines 31-32) is unclear since there is no longitudinal direction of the dispenser defined.

Further, claim 9 is wrongly (Art. 6 PCT, Rule 6.4 PCT) drafted as a claim dependent on "any of the preceding claims", because the "second cap piece (116)" (claim 9, line 29) referred to in claim 9 is **only** defined in claim 3.

- c. In claim 11, the term "pre-defined angle" (claim 11, line 6) and the definition of the "second suction zone" (claim 11, lines 7-8) with respect to the first suction zone are unclear (Art. 6 PCT).

Further, claim 11 is wrongly (Art. 6 PCT, Rule 6.4 PCT) drafted as a claim dependent on "any of the preceding claims", because the "third cap piece (119)", the "second suction zone (F)", and the "first suction zone (F)" in claim 11 are **only** defined in claim 10.

- d. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.
5. In order to remedy the above objections, the applicant is invited to file amended claims. The attention of the applicant is drawn to the fact that the application may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed (Art. 34(2) b) PCT).

In order to facilitate the examination of the conformity of the amended application with the requirements of Art. 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (Rule 66.8(a) PCT).

The applicant's attention is drawn to the fact that, as a consequence of Rule 66.8(a) PCT the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.

10. Washing machine according to claim 7, **characterized in that** the base (121) of said third cap piece (119) forms an acute angle with respect to the bottom (112) of the dispenser (102) so as to define a second suction zone (F') having a variable suction height in respect to said bottom (112).

5

11. Washing machine according to claims 9 and 10, **characterized in that** said second suction zone (F') is located at a greater distance from said bottom (112) than said first suction zone (F).

10 12. Washing machine according to claim 11, **characterized in that** said second suction zone (F') has a lower level that substantially coincides with the upper level of said first suction zone (F), and extends with the same inclination as the latter, in such a manner as to obtain a substantially continuous suction zone including said first and said second
15 zones (F, F').

13. Washing aid dispenser for a washing machine provided with at least a compartment (3, 103) adapted to contain said washing aids and to supply the washing tub of said washing machine with a mixture of water
20 and said washing aids, said compartment (3, 103) being provided with a first siphon (8, 108) having a pre-determined suction height (h) to draw in and convey towards the washing tub of said washing machine a first layer of said mixture, and at least a second siphon (14, 114), **characterized in that** said second siphon (14, 114) has a suction height (H) higher than
25 said first siphon (8, 108) to supply said washing machine with a second layer of said mixture, said second layer lying in said dispenser (2, 102) at a greater height with respect to said first layer.

10. Washing machine according to claim 7, **characterized in that** the base (121) of said third cap piece (119) forms an acute angle with respect to the bottom (112) of the dispenser (102) so as to define a second suction zone (F') having a variable suction height in respect to said bottom (112).

5

11. Washing machine according to claims 9 and 10, **characterized in that** said second suction zone (F') is located at a greater distance from said bottom (112) than said first suction zone (F).

10 12. Washing machine according to claim 11, **characterized in that** said second suction zone (F') has a lower level that substantially coincides with the upper level of said first suction zone (F), and extends with the same inclination as the latter, in such a manner as to obtain a substantially continuous suction zone including said first and said second
15 zones (F, F').

13. Washing aid dispenser for a washing machine provided with at least a compartment (3, 103) adapted to contain said washing aids and to supply the washing tub of said washing machine with a mixture of water
20 and said washing aids, said compartment (3, 103) being provided with a first siphon (8, 108) having a pre-determined suction height (h) to draw in and convey towards the washing tub of said washing machine a first layer of said mixture, and at least a second siphon (14, 114), **characterized in that** said second siphon (14, 114) has a suction height (H) higher than
25 said first siphon (8, 108) to supply said washing machine with a second layer of said mixture, said second layer lying in said dispenser (2, 102) at a greater height with respect to said first layer.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT OR THE DECLARATION

(PCT Rule 44.1)

To:

PROPRIA S.R.L.
Attn. Giugni, Valter
Via Mazzini, 13
I-33170 Pordenone
ITALY

Date of mailing
(day/month/year)

26/05/2003

Applicant's or agent's file reference

B02122PCE2A

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/EP 03/ 01555

International filing date
(day/month/year)

17/02/2003

Applicant

ELECTROLUX HOME PRODUCTS CORPORATION N.V.

1. ☒ The applicant is hereby notified that the International Search Report has been established and is transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland
Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no International Search Report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Further action(s):** The applicant is reminded of the following:

Shortly after **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

Within **19 months** from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within **20 months** from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Malene Strarup

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference B02122PCE2A	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/ 01555	International filing date (<i>day/month/year</i>) 17/02/2003	(Earliest) Priority Date (<i>day/month/year</i>) 19/03/2002
Applicant ELECTROLUX HOME PRODUCTS CORPORATION N.V.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2
☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

EP 03/01555

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 D06F39/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 D06F A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 37 14 301 A (BOSCH SIEMENS HAUSGERAETE) 10 November 1988 (1988-11-10) * the whole document *	1,13,14
A	EP 0 225 220 A (ESSWEIN SA) 10 June 1987 (1987-06-10) column 4, line 21 - line 46 column 6, line 3 - line 12 claims 1,6; figures 3,4	1,13,14

☐ Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

15 May 2003

Date of mailing of the international search report

26/05/2003

Name and mailing address of the ISA

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Weinberg, E

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 03/01555

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
DE 3714301	A	10-11-1988	DE	3714301 A1	10-11-1988
EP 0225220	A	10-06-1987	FR	2589170 A1	30-04-1987
			DE	3667514 D1	18-01-1990
			EP	0225220 A1	10-06-1987

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PATENT COOPERATION TREATY



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B02122PCE2A	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP03/01555	International filing date (day/month/year) 17.02.2003	Priority date (day/month/year) 19.03.2002
International Patent Classification (IPC) or both national classification and IPC D06F39/02		
Applicant ELECTROLUX HOME PRODUCTS CORPORATION N.V. et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:
- I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 12.07.2003	Date of completion of this report 20.11.2003
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Weinberg, E Telephone No. +49 89 2399-2298 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP03/01555

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

- | | |
|--------|--|
| 1, 3-9 | as originally filed |
| 2, 2a | received on 08.11.2003 with letter of 03.11.2003 |

Claims, Numbers

- | | |
|------|--|
| 1-13 | received on 08.11.2003 with letter of 03.11.2003 |
|------|--|

Drawings, Sheets

- | | |
|-----|---------------------|
| 1/1 | as originally filed |
|-----|---------------------|

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP03/01555**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

The subject-matter of independent claims 1, 13 and of dependent claims 2-12 complies with the requirements of Art. 33(1) PCT for the following reasons:

1. Closest prior art

The closest prior art is represented by DE 37 14 301 A (D1), cited in the description on page 2, line 5-8, which discloses (see D1, column 2, lines 56-60, claim 1, figure 1) the features of the preamble of independent claims 1 and 13.

2. Underlying problem

The technical problem solved by the present application is to provide a washing machine with a low-cost, reliable, easy to manufacture washing aid dispenser, said washing aid dispenser being capable of working in an optimum manner with liquids of different densities, even if they do not mix up homogeneously together inside the dispenser itself (see page 2a, line 5 - page 3, line 29).

3. Solution to the problem

The solution to this problem is provided by the characterising part of the independent claims 1 and 13, in particular in that the second siphon has a higher suction height than the first siphon to draw-in and convey towards said washing tub a second layer of said mixture (claim 1, lines 20-23).

4. Difference to the prior art

The difference between the independent claims 1 and 13 on one hand and D1 on the other hand is that all the siphons of the washing aid dispenser of D1 have the same suction height with respect to the bottom of the dispenser. Consequently, the washing aid dispenser of D1 is not capable to draw-in simultaneously a mixture of water and washing aids at different levels. This feature is also not disclosed in the other document EP 0 225 220 cited in the International Search Report.

Therefore, the combination of the features of each independent claim is neither known from the available prior art cited in the International Search Report, nor would the skilled person find any hint or incentive in the available prior art to modify the washing aid dispenser of D1 as suggested in the independent claims of the present application.

5. Conclusion

Consequently, the subject-matter of claims 1-12 relating to a washing machine and of claim 13 relating to a washing aid dispenser for a washing machine is new, inventive and industrially applicable. Therefore, the subject-matter of these claims meets the requirements of Art. 33(1) PCT.

Note:

The amendments to claim 13 submitted with the letter dated 03.11.2003 introduces subject-matter which extends beyond the content of the application as filed, contrary to Art. 34(2)b) PCT.

Therefore, this International Preliminary Examination Report has been drawn up as if the following amendments have been made in order to meet these requirements of Art. 34(2)b) PCT:

- i) the term "to supply said washing machine with (...)" in claim 13, lines 18-19 should have been amended to "to supply the **washing tub** of said washing machine with (...)" ;
- ii) further the term "to supply said washing machine with a (...)" in claim 13, lines 21-22 and lines 24-25 should have been amended to "**to draw in and convey towards the washing tub** of said washing machine **a** (...)" .

to be triggered, i.e. primed into working and, as a result, the liquid detergent substance to be drawn in from the dispenser towards the washing tub duly mixed with the inflowing water.

5 A typical drawback which is encountered with currently used types of dispensers lies in the fact that the siphon must work with liquids of different densities (water and liquid washing aid, e.g. a fabric softener), which do not mix up very well, i.e. homogeneously together, but, owing to the flow pattern that is brought about inside the dispenser, tend to rather
10 take a stratified or layered form, without any clear separation between water and washing substance. Such a layer-forming mixing of water and washing aid causes the siphon to work in a discontinuous manner, in which water is drawn in preferentially with respect to the washing aid. As a result, it quite often occurs that, upon conclusion of the washing cycle
15 performed by the machine, remnants of the denser washing aids or products, such as for instance the fabric softener, can still be found on the bottom of the respective compartments in the dispenser.

Such a drawback might be overcome through an increase in the inflow
20 pressure of the water supplied to the dispenser, but this would unavoidably give rise to excessive frothing during mixing with the liquid detergent substance so as to anyway cause the siphon to work irregularly or, in the worst case, lead to suds flowing over the dispenser and cause a lot of inconvenience.

25

Another possible solution in this connection lies in increasing the negative pressure generated by the siphon so as to obtain a greater draw-in capability. This solution, however, implies an increase in the overall size of the siphon and, as a result, it turns out to be scarcely practicable due
30 to construction-related limitations imposed by the machine requiring extremely reduced sizes in general.

It therefore is a main purpose of the present invention to do away with

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ART 34 AMDT

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CLAIMS

1. Washing aid dispenser for a washing machine comprising a washing tub adapted to be supplied, through said dispenser, with a mixture of water and said washing aids, said washing aid dispenser (2, 102) being
15 provided with at least a compartment (3, 103), which is adapted to contain said washing aids and is provided with a first siphon (8, 108) having a pre-determined suction height (h) to draw-in and convey towards said washing tub a first layer of said mixture, **characterized in that** in said compartment (3, 103) there is provided at least a second siphon (14,
20 114) having a higher suction height (H) than said first siphon (8, 108) to draw-in and convey towards said washing tub a second layer of said mixture, said second layer lying in said dispenser (2, 102) at a greater height with respect to said first layer.

25 2. Washing aid dispenser according to claim 1, **characterized in that** said at least a compartment (3, 103) is in communication with water supply means (4, 104) adapted to deliver water from said machine, said water supply means being provided with a plurality of apertures (7, 107) adapted to let water into said compartment (3, 103).

30

3. Washing aid dispenser according to claim 1, **characterized in that** said first and second siphons (8, 14, 108, 114) are formed by a first conduit (9, 109) associated to a first cap piece (10, 110) situated

thereabove and a second conduit (15, 115) associated to a second cap piece (16, 116) situated thereabove, respectively, in which each one of said first and second conduits (9, 15, 109, 115) is open at both opposite extremities thereof.

5

4. Washing aid dispenser according to claim 1, **characterized in that** the water head of said second siphon (14, 114) is higher than the water head of said first siphon (8, 108).

10 5. Washing aid dispenser according to claims 3 and 4, **characterized in that** the diameter of said second conduit (15, 115) is larger than the diameter of said first conduit (9, 109).

15 6. Washing aid dispenser according to claim 1, **characterized in that** in said compartment (3, 103) there is further provided a third siphon (17, 117) having a suction height (H') that is greater than the suction height (H) of said second siphon (14, 114).

20 7. Washing aid dispenser according to claim 6, **characterized in that** said third siphon (17, 117) is formed by a third conduit (18, 118) that is open at both opposite ends thereof, ad a third cap piece (19, 119) situated thereabove.

25 8. Washing aid dispenser according to claims 4 and 6, **characterized in that** the water head of said third siphon (17, 117) is higher than or equal to the water head of said second siphon (14, 114).

30 9. Washing aid dispenser according to any of the preceding claims, **characterized in that** the base (120) of said second cap piece (116) forms a pre-defined angle with respect to the bottom (112) of the dispenser (102) so as to define a suction height which is longitudinally variable along the same dispenser.

10. Washing aid dispenser according to claim 9, **characterized in that** said longitudinally variable suction height forms a first suction zone (F).

11. Washing aid dispenser according to any one of the preceding
5 claims or any combination thereof, **characterized in that** the base (121)
of said third cap piece (119) forms a pre-defined angle with respect to the
bottom (112) of the dispenser (102) so as to define a second suction zone
(F') lying at a greater distance from said bottom (112) than said first
suction zone (F).

10

12. Washing aid dispenser according to claim 11, **characterized in**
that said second suction zone (F') has a lower level that substantially
coincides with the upper level of said first suction zone (F), and extends
with the same inclination as the latter, in such a manner as to obtain a
15 substantially continuous suction zone including said first and said second
zones (F, F').

13. Washing machine comprising a washing aid dispenser as claimed
in claim 1.

20

14. Washing aid dispenser and washing machine comprising said
washing aid dispenser characterized by what has been described and
illustrated in and with reference to the accompanying drawings.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 21 NOV 2003

Applicant's or agent's file reference B02122PCE2A	FOR FURTHER ACTION		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP03/01555	International filing date (<i>day/month/year</i>) 17.02.2003	Priority date (<i>day/month/year</i>) 19.03.2002	
International Patent Classification (IPC) or both national classification and IPC D06F39/02			
Applicant ELECTROLUX HOME PRODUCTS CORPORATION N.V. et al.			

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	<p>This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 5 sheets.</p>
3.	<p>This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 12.07.2003	Date of completion of this report 20.11.2003
Name and mailing address of the international preliminary examining authority: <div style="display: flex; align-items: center;"> <div> European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 </div> </div>	Authorized Officer Weinberg, E Telephone No. +49 89 2399-2298



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP03/01555

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1, 3-9 as originally filed
2, 2a received on 08.11.2003 with letter of 03.11.2003

Claims, Numbers

1-13 received on 08.11.2003 with letter of 03.11.2003

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP03/01555

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-13
	No: Claims	
Inventive step (IS)	Yes: Claims	1-13
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

2. Citations and explanations

see separate sheet

The subject-matter of independent claims 1, 13 and of dependent claims 2-12 complies with the requirements of Art. 33(1) PCT for the following reasons:

1. Closest prior art

The closest prior art is represented by DE 37 14 301 A (D1), cited in the description on page 2, line 5-8, which discloses (see D1, column 2, lines 56-60, claim 1, figure 1) the features of the preamble of independent claims 1 and 13.

2. Underlying problem

The technical problem solved by the present application is to provide a washing machine with a low-cost, reliable, easy to manufacture washing aid dispenser, said washing aid dispenser being capable of working in an optimum manner with liquids of different densities, even if they do not mix up homogeneously together inside the dispenser itself (see page 2a, line 5 - page 3, line 29).

3. Solution to the problem

The solution to this problem is provided by the characterising part of the independent claims 1 and 13, in particular in that the second siphon has a higher suction height than the first siphon to draw-in and convey towards said washing tub a second layer of said mixture (claim 1, lines 20-23).

4. Difference to the prior art

The difference between the independent claims 1 and 13 on one hand and D1 on the other hand is that all the siphons of the washing aid dispenser of D1 have the same suction height with respect to the bottom of the dispenser. Consequently, the washing aid dispenser of D1 is not capable to draw-in simultaneously a mixture of water and washing aids at different levels. This feature is also not disclosed in the other document EP 0 225 220 cited in the International Search Report.

Therefore, the combination of the features of each independent claim is neither known from the available prior art cited in the International Search Report, nor would the skilled person find any hint or incentive in the available prior art to modify the washing aid dispenser of D1 as suggested in the independent claims of the present application.

5. Conclusion

Consequently, the subject-matter of claims 1-12 relating to a washing machine and of claim 13 relating to a washing aid dispenser for a washing machine is new, inventive and industrially applicable. Therefore, the subject-matter of these claims meets the requirements of Art. 33(1) PCT.

Note:

The amendments to claim 13 submitted with the letter dated 03.11.2003 introduces subject-matter which extends beyond the content of the application as filed, contrary to Art. 34(2)b) PCT.

Therefore, this International Preliminary Examination Report has been drawn up as if the following amendments have been made In order to meet these requirements of Art. 34(2)b) PCT:

- i) the term "to supply said washing machine with (...)" in claim 13, lines 18-19 should have been amended to "to supply the **washing tub** of said washing machine with (...)"
- ii) further the term "to supply said washing machine with a (...)" in claim 13, lines 21-22 and lines 24-25 should have been amended to "**to draw in and convey towards the washing tub** of said washing machine a (...)"

to be triggered, i.e. primed into working and, as a result, the liquid detergent substance to be drawn in from the dispenser towards the washing tub duly mixed with the inflowing water.

5 DE 37 14 301 A1 discloses a plurality of syphon blocks, formed from a small standpipe and a cap, arranged in a washing-agent flush-in tray in such a way that, if one syphon fails to suck up the mixture consisting of washing-agent and water, the other syphons continue to work.

10 A typical drawback which is encountered with currently used types of dispensers lies in the fact that the siphon must work with liquids of different densities (water and liquid washing aid, e.g. a fabric softener), which do not mix up very well, i.e. homogeneously together, but, owing to the flow pattern that is brought about inside the dispenser, tend to rather
15 take a stratified or layered form, without any clear separation between water and washing substance. Such a layer-forming mixing of water and washing aid causes the siphon to work in a discontinuous manner, in which water is drawn in preferentially with respect to the washing aid. As a result, it quite often occurs that, upon conclusion of the washing cycle
20 performed by the machine, remnants of the denser washing aids or products, such as for instance the fabric softener, can still be found on the bottom of the respective compartments in the dispenser.

Such a drawback might be overcome through an increase in the inflow
25 pressure of the water supplied to the dispenser, but this would unavoidably give rise to excessive frothing during mixing with the liquid detergent substance so as to anyway cause the siphon to work irregularly or, in the worst case, lead to suds flowing over the dispenser and cause a lot of inconvenience.

30

Another possible solution in this connection lies in increasing the negative pressure generated by the siphon so as to obtain a greater draw-in capability. This solution, however, implies an increase in the overall size

of the siphon and, as a result, it turns out to be scarcely practicable due to construction-related limitations imposed by the machine requiring extremely reduced sizes in general.

5 It therefore is a main purpose of the present invention to do away with

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CLAIMS

1. Washing machine comprising a washing aid dispenser and a washing tub adapted to be supplied, through said dispenser, with a mixture of water and said washing aids, said washing aid dispenser (2, 102) being provided with at least a compartment (3, 103), which is adapted to contain said washing aids and is provided with a first siphon (8, 108) having a pre-determined suction height (h) to draw-in and convey towards said washing tub a first layer of said mixture, and at least with a second siphon, **characterized in that** said second siphon (14, 114) has a suction height (H) higher than said first siphon (8, 108) to draw-in and convey towards said washing tub a second layer of said mixture, said second layer lying in said dispenser (2, 102) at a greater height with respect to said first layer.

2. Washing machine according to claim 1, **characterized in that** said at least a compartment (3, 103) is in communication with water supply means (4, 104) adapted to deliver water from said machine, said water supply means being provided with a plurality of apertures (7, 107) adapted to let water into said compartment (3, 103).

3. Washing machine according to claim 1, **characterized in that** said first and second siphons (8, 14, 108, 114) are formed by a first conduit (9, 109) associated to a first cap piece (10, 110) situated thereabove and a

second conduit (15, 115) associated to a second cap piece (16, 116) situated thereabove, respectively, in which each one of said first and second conduits (9, 15, 109, 115) is open at both opposite extremities thereof.

5

4. Washing machine according to claim 1, **characterized in that** the water head of said second siphon (14, 114) is higher than the water head of said first siphon (8, 108).

10

5. Washing machine according to claims 3 and 4, **characterized in that** the diameter of said second conduit (15, 115) is larger than the diameter of said first conduit (9, 109).

15 6. Washing machine according to claim 1, **characterized in that** in said compartment (3, 103) there is further provided a third siphon (17, 117) having a suction height (H') that is greater than the suction height (H) of said second siphon (14, 114).

20 7. Washing machine according to claim 6, **characterized in that** said third siphon (17, 117) is formed by a third conduit (18, 118) that is open at both opposite ends thereof, and a third cap piece (19, 119) situated thereabove.

25 8. Washing machine according to claims 4 and 6, **characterized in that** the water head of said third siphon (17, 117) is higher than or equal to the water head of said second siphon (14, 114).

30 9. Washing machine according to claim 3, **characterized in that** the base (120) of said second cap piece (116) forms an acute angle with respect to the bottom (112) of the dispenser (102) so as to define a first suction zone (F) having a variable suction height in respect to said bottom (112).

10. Washing machine according to claim 7, **characterized in that** the base (121) of said third cap piece (119) forms an acute angle with respect to the bottom (112) of the dispenser (102) so as to define a second suction zone (F') having a variable suction height in respect to said bottom (112).

11. Washing machine according to claims 9 and 10, **characterized in that** said second suction zone (F') is located at a greater distance from said bottom (112) than said first suction zone (F).

12. Washing machine according to claim 11, **characterized in that** said second suction zone (F') has a lower level that substantially coincides with the upper level of said first suction zone (F), and extends with the same inclination as the latter, in such a manner as to obtain a substantially continuous suction zone including said first and said second zones (F, F').

13. Washing aid dispenser for a washing machine provided with at least a compartment (3, 103) adapted to contain said washing aids and to supply said washing machine with a mixture of water and said washing aids, said compartment (3, 103) being provided with a first siphon (8, 108) having a pre-determined suction height (h) to supply said washing machine with a first layer of said mixture, and at least a second siphon (14, 114), **characterized in that** said second siphon (14, 114) has a suction height (H) higher than said first siphon (8, 108) to supply said washing machine with a second layer of said mixture, said second layer lying in said dispenser (2, 102) at a greater height with respect to said first layer.

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